

Delaware State Fair Recycling Initiative

At the annual Delaware State Fair, visitors not only enjoy agricultural events and amusement park rides, but they also can eat and drink their fill of the concessionaires' treats. In 2006, fair organizers launched a recycling initiative during the 10-day event in Harrington, Delaware, inviting fairgoers to dispose of their beverage containers in recycling bins and encouraging concessionaires to collect their cardboard packaging for recycling. The successful initiative raked in 6,958 pounds of recyclables. In 2007, fair organizers upped the ante by about 7 percent, collecting 7,470 pounds of materials for recycling.

Facts at a Glance

- The fairgrounds cover 330 acres.
- More than 300,000 visitors come to the annual 10-day fair.
- The fair puts out 400, 96-gallon containers for trash collection.
- The fair used 50 recycling bins during the 2007 fair.
- Four AmeriCorps volunteers collected recyclables either nightly or each morning before the fair opened.
- In 2007, the fair collected an estimated 7,470 pounds of recycled materials.
- The contamination rate was about 12 percent, a number DNREC deems "good."



The recycling bins (left), like the garbage cans (right), have wheels to facilitate moving them into location.

Program Overview

The Delaware State Fair began as a small county event, created in 1920, to provide a place for promoting and encouraging agriculture. Today, the fair is one of the state's largest events, held on 330 acres of fairgrounds. The state fair draws more than 300,000 people to the annual 10-day event, known for its livestock shows, live music and entertainment, and the nightly Delaware State Fair parade. In addition, the fair hosts arts and crafts exhibits, family activities, and a wide variety of contests, along with assorted food vendors.

In 2006, the Delaware Department of Natural Resources & Environmental Control (DNREC) and the Delaware Solid Waste Authority (DSWA) partnered with the fair's organizers to collect corrugated cardboard, plastic bottles, and aluminum cans. DNREC chose cardboard because it is available in high volumes in vendor areas as a packaging waste from food, beverages, and prizes. Offering recycling for plastic bottles and

aluminum cans was a way to capture materials that fairgoers could easily recycle. The recycling initiative builds upon the fair's legacy of preserving agriculture, reducing waste, and protecting the environment.

DNREC and DSWA officials collaborated with the fair's marketing department and facility manager to establish a partnership and work out the logistics for operating the recycling initiative. Volunteer labor to collect the materials on the fairgrounds was provided through an innovative arrangement between the DNREC Division of Parks and Recreation and AmeriCorps, a network of local, state, and national service programs that coordinates volunteers to serve critical needs in education, public safety, health, and the environment.

Nuts and Bolts

Bin Selection. The fair's recycling efforts stemmed from DNREC's desire to put recycling in the public eye. Appearance was a key consideration in selecting the recycling bins to purchase, and much thought went into the bins' aesthetic design. The department sought bins that would stand out from the nearby garbage receptacles. "This was *the* primary driver," says Bill Miller, an environmental scientist with DNREC's Solid and Hazardous Waste Management Branch, who helped coordinate the recycling program at the fair. "Recycling bins have to be discernable from trash cans." DNREC officials wanted the bins to have wheels for ease of moving, a lockable lid to minimize contamination (mixing trash in with recyclables), and a capacity large enough so workers would not have to empty them every few hours.

After reviewing numerous product catalogs and Web sites, viewing options at local hardware stores, and speaking with product manufacturers, DNREC's recycling coordinator finally settled on green, 68-gallon, wheeled bins with bright yellow lids featuring openings just large enough to accept aluminum cans and plastic bottles. The yellow lids cost more but ensured that the recycling bins would stand out. The department ordered specialized stickers as well to further brand the recycling bins. The green bases feature stickers that read "Recycle Here" on both sides. The yellow lids have stickers that read "Warning: No Garbage" and "Empty Plastic and Aluminum Only." The bins for cardboard were labeled "Cardboard Only—No Trash, No Food Residue, Please Break Down Your Boxes."

DNREC ultimately purchased 100 bins at a cost of \$7,600. Factoring in the cost of the stickers, the bins worked out to be about \$84 each.

Collection Logistics. DNREC officials strategically placed the commingled bins (all recyclables can be collected in one bin) throughout the fairgrounds to encourage visitors to recycle their plastic and aluminum beverage containers. Bins were placed along walkways where fairgoers could easily access them and adjacent to garbage cans to reduce contamination. The bins for cardboard were placed behind vendor stalls, again for ease of access. During the 2007 fair, DNREC



The recycling bins feature bright yellow tops and clear labels to help fairgoers differentiate them from the garbage cans.

put out 50 containers: 30 for collecting aluminum and plastic containers and 20 for cardboard. (DNREC did not put out all of its available recycling bins due to the limited number of volunteers available to empty them.) DSWA placed four 8-cubic-yard recycling dumpsters, for cardboard only, behind strategic vendor areas.

Volunteers from AmeriCorps assisted in collecting the recyclable materials. Each day, four volunteers spent about 2 hours collecting the recyclables, removing any commingled trash, and delivering the materials (using two full-size pickup trucks) to the DSWA cardboard dumpsters onsite or a DSWA recycling drop-off center about a mile away from the fairgrounds.

The AmeriCorps volunteers weighed the aluminum cans and plastic bottles before trucking the materials to the drop-off center. DNREC provided the volunteers with a bathroom-style scale to weigh the bags of recyclables. The AmeriCorps volunteers estimated the volume of cardboard (based on the space they took up in the truck bed), and then converted the volumes to weights using the ratio of 150 pounds per cubic yard, as prescribed in the EPA publication *Measuring Recycling: A Guide for State and Local Governments* (EPA530-R-97-011).

During the 2006 pilot program, 252 pounds of plastic, 135 pounds of aluminum, and 7,080 pounds of cardboard were collected. By 2007, the plastic and aluminum numbers more than doubled, jumping to 535 pounds and 423 pounds, respectively. The cardboard number dropped slightly to 6,512 pounds. With landfill tipping fees of \$61.50 per ton, diverting 7,470 pounds (about 3.7 tons) saved approximately \$230 in disposal costs.

After the fair, DNREC officials collected the recycling bins, washed them, and stacked them four or five high (after taking the wheels off) in a storage shed about 20 minutes away from fairgrounds. The department uses a few of the bins to facilitate recycling at small DNREC events during the year and is investigating other opportunities to use the bins for additional events.

Results From the 2006 and 2007 Fairs

Bins	2006	2007
For collecting plastic and aluminum containers	24	30
For collecting cardboard	20	20
Material	(in Pounds)	(in Pounds)
Plastic bottles	252	535
Aluminum cans	135	423
Cardboard	6,571	6,512
Total	6,958	7,470*

*DNREC attributes the overall increase in recycling between the 2006 and 2007 fairs to the use of more bins and greater participation among fairgoers.

Challenges and Solutions

Challenge: DNREC did not have enough staff to provide the labor to collect the recyclables.

Solution: The solution involved a team approach and partnerships. DNREC staff spent about 20 labor hours in planning for recycling at the 2007 Delaware State Fair, with about 36 labor hours onsite for physical setup and oversight. Four AmeriCorps volunteers spent about 2 hours each day collecting and delivering the recyclables to a drop-off location. DSWA spent about 10 hours of planning and oversight and 45 hours in collection (including driver travel). The Delaware State Fair staff (facilities manager and marketing director) spent a minimal amount of time in planning, probably fewer than 8 hours combined.

Challenge: Education is the biggest hurdle next to organizing the logistics for collecting the recyclables.

Solution: Delaware State Fair's marketing department paid for a brochure insert about the recycling program in local newspapers. Vendors received flyers and maps showing the location of recycling containers throughout the fairgrounds. Next year, DNREC plans to attend the vendors' meeting to promote the recycling program. Further, DNREC plans to better educate vendors and fairgoers on the what, why, where, and how of recycling.

Reasons for Success

The partnerships and cooperation among DNREC, DSWA, and the Delaware State Fair is critical to the success of the fair's recycling efforts. The labor provided by the AmeriCorps volunteers also was integral to the program's success. With no dedicated funds to pay for collection and removal, the volunteers are essential to the Delaware State Fair's recycling program.

Future Forecast

The goal during the first 2 years of the program was to offer recycling as an option and demonstrate the simplicity of recycling to fairgoers and vendors alike. The pilot program served as a template for future recycling efforts at the Delaware State Fair and other community-wide events. In the future, DNREC officials plan to meet with vendors in person to encourage expanded participation. Further, DNREC would like to expand the list of materials it collects at the fair, possibly to include polystyrene cups. A longer-term goal is to purchase more bins and ultimately provide as many recycling bins as garbage cans. The ongoing challenge is finding enough labor to collect and deliver the materials to the recycling center and helping visitors understand the importance of recycling.

All photos courtesy of Bill Miller, DNREC.

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DNREC developed this map to illustrate the location of its 68-gallon recycling bins for commingled aluminum cans and plastic bottles, 68-gallon bins for cardboard, and 8-yard dumpsters for cardboard.



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